

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1 of 3

**Complete if Known**

Application Number	10/501,028
Filing Date	March 14, 2005
First Named Inventor	Christopher M. Starr
Art Unit	1657
Examiner Name	Kailash C. Srivastava
Attorney Docket Number	15021-6

**U.S. PATENT DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code <sup>2</sup> (if known)			
	1	US-4,866,042 A	09-12-1989		
	2	US- 5,672,683	09-30-1997		
	3	US- 5,981,194	11-09-1999		
	4	US- 2003/0072761	04-17-2003		
	5	US- 2008/0014188	01-17-2008		
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				
	1	WO 03/009815	02-06-2003			
	2	WO 94/01463	01-20-1994			
	3	WO 98/23646	06-04-1998			
	4	WO 89/04663	06-01-1989			

Examiner  
SignatureDate  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Substitute for form 1449B/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 2 of 3

**Complete if Known**

Application Number	10/501,028
Filing Date	March 3, 2005
First Named Inventor	Christopher M. Starr
Art Unit	1657
Examiner Name	Kailash C. Srivastava
Attorney Docket Number	15021-6

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		WU, D., ET AL., "Pharmacokinetics and brain uptake of biotinylated basic fibroblast growth factor conjugated to a blood-brain barrier drug delivery system", Journal of Drug Target, 2002, pgs. 239-45, Volume 10, Number 3.	
		QIAN, Z.M., ET AL., "Targeted drug delivery via the transferrin receptor-mediated endocytosis pathway", Pharmacol Rev, 2002, pgs. 561-87, Volume 54, Number 4.	
		SONG, B.W., ET AL., "Enhanced neuroprotective effects of basic fibroblast growth factor in regional brain ischemia after conjugation to a blood-brain barrier delivery vector", Journal of Pharmacol Exp Ther, 2002, pgs. 605-10, Volume 301, Number 2.	
		MOOS, T. AND MORGAN, E.H., "Restricted transport of anti-transferrin receptor antibody (OX26) through the blood-brain barrier in the rat", Journal of Neurochemistry, 2001, pgs. 119-29, Volume 79, Number 1.	
		ENDO, N. ET AL., "In-Vitro Cytotoxicity of a Human Serum Albumin-mediated Conjugate of Methotrexate with Anti-MM46 Monoclonal Antibody", Cancer Research, 1987, pgs. 1076-1080, Volume 47, Number 4.	
		DEMEULE, M., ET AL., "High transcytosis of melanotransferrin (P97) across the blood-brain barrier", Journal of Neurochemistry, 2002, pgs. 924-933, Volume 83.	
		MOROO, I., ET AL., "Identification of a Novel Route of Iron Transcytosis across the Mammalian Blood-Brain Barrier", Microcirculation, 2003, pgs. 457-462, Volume 10.	
		AKTAS, Y., ET AL., "Development and brain delivery of chitosan-PEG nanoparticles functionalized with the monoclonal antibody OX26", Bioconjugate Chem., 2005, pgs. 1503-11, Volume 16, Number 6.	
		BICKEL, U., ET AL., "Pharmacologic effects in vivo in brain by vector-mediated peptide drug delivery", Proc Natl Acad Sci., 1993, pgs. 2618-22, Volume 90, Number 7.	
		BICKEL, U., ET AL., "In vivo demonstration of subcellular localization of anti-transferrin receptor monoclonal antibody-colloidal gold conjugate in brain capillary endothelium", The Journal of Histochemistry and Cytochemistry, 1994, pgs. 1493-7, Volume 42, Number 11.	
		BICKEL, U., ET AL., "In vivo cleavability of a disulfide-based chimeric opioid peptide in rat brain", Bioconjugate Chem., 1995, pgs. 211-8, Volume 6, Number 2.	
		BICKEL, U., ET AL., "Delivery of peptides and proteins through the blood-brain barrier", Advanced Drug Delivery Reviews, 2001, pgs. 247-79, Volume 46, Number 1-3.	
		BOADO, R.J., ET AL., "Cloning and expression in Pichia pastoris of a genetically engineered single chain antibody against the rat transferrin receptor", Journal of Drug Targeting, 2000, pgs. 403-12, Volume 8, Number 6.	
		BROADWELL, R.D., ET AL., "Transcytosis of protein through the mammalian cerebral epithelium and endothelium. III. Receptor-mediated transcytosis through the blood-brain barrier of blood-borne transferrin and antibody against the transferrin receptor", Experimental Neurology, 1996, pgs. 47-65, Volume 142, Number 1.	
		CERLETTI A, ET AL., "Endocytosis and transcytosis of an immunoliposome-based brain drug delivery system", Journal of Drug Targeting, 2000, pgs. 435-46, Volume 8, Number 6.	
		DEGUCHI, Y., ET AL., "Retention of biologic activity of human epidermal growth factor following conjugation to a blood-brain barrier drug delivery vector via an extended poly (ethylene glycol) linker", Bioconjugate Chem., 1999, pgs. 32-7, Volume 10, Number 1.	
		FRIDEN, P.M., "Anti-transferrin receptor antibody and antibody-drug conjugates cross the blood-brain barrier", Proc. Natl. Acad. Sci. USA, 1991, pgs. 4771-5, Volume 88, Number 11.	
		GOSK, S., ET AL., "Targeting anti-transferrin receptor antibody (OX26) and OX26-conjugated liposomes to brain capillary endothelial cells using in situ perfusion", Journal of Cerebral Blood Flow & Metabolism, 2004, pgs. 1193-204, Volume 24, Number 11.	

		HUWYLER, J., ET AL., "Receptor mediated delivery of daunomycin using immunoliposomes: pharmacokinetics and tissue distribution in the rat", The Journal of Pharmacology and Experimental Therapeutics, 1997, pgs. 1541-6, Volume 282, Number 3.	
		JEFFERIES, W.A., ET AL., "Analysis of lymphopoietic stem cells with a monoclonal antibody to the rat transferrin receptor", Immunology, 1985, pgs. 333-41, Volume 54, Number 2.	
		JEFFERIES, W.A., ET AL., "Transferrin receptor on endothelium of brain capillaries", Nature, 1984, pgs. 162-3, Volume 312.	
		KANG, Y.S., AND PARDRIDGE, W.M., "Use of neutral avidin improves pharmacokinetics and brain delivery of biotin bound to an avidin-monoclonal antibody conjugate", The Journal of Pharmacology and Experimental Therapeutics, 1994, pgs. 344-50, Volume 269, Number 1.	
		KANG, Y.S., ET AL., "Pharmacokinetics and organ clearance of a 3'-biotinylated, internally [ <sup>32</sup> P]-labeled phosphodiester oligodeoxynucleotide coupled to a neutral avidin/monoclonal antibody conjugate", Drug Metabolism and Disposition, 1995, pgs. 55-9, Volume, 23, Number 1.	
		KANG, Y.S., ET AL., "Stability of the disulfide bond in an avidin-biotin linked chimeric peptide during in vivo transcytosis through brain endothelial cells", Journal of Drug Targeting, 2000, pgs. 425-34, Volume 8, Number 6.	
		KURIHARA, A. AND PARDRIDGE, W.M., "Aβ <sup>1-40</sup> Peptide radiopharmaceuticals for brain amyloid imaging: III-In chelation, conjugation to poly(ethylene glycol)-biotin linkers, and autoradiography with Alzheimer's disease brain sections", Bioconjugate Chem., 2000, pgs. 380-386, Volume 11.	
		MURASZKO K, ET AL., "Pharmacokinetics and toxicology of immunotoxins administered into the subarachnoid space in nonhuman primates and rodents", Cancer Research, 1993, pgs. 3752-7, Volume 53, Number 16.	
		MURUGANANDAM, A., ET AL., "Selection of phage-displayed llama single-domain antibodies that transigrate across human blood-brain barrier endothelium", The FASEB Journal, 2001, pgs. 1-22.	
		PARDRIDGE, W.M., ET AL., "Vector-mediated delivery of a polyamide ("peptide") nucleic acid analogue through the blood-brain barrier in vivo", Proc. Natl. Acad. Sci. USA, 1995, pgs. 5592-6, Volume 92, Number 12.	
		PARDRIDGE, W.M., ET AL., "Transport of human recombinant brain-derived neurotrophic factor (BDNF) through the rat blood-brain barrier <i>in vivo</i> using vector-mediated peptide drug delivery", Pharmaceutical Research, 1994, pgs. 738-46, Volume 11, Number 5.	
		SAITO, Y., ET AL., "Vector-mediated delivery of <sup>125</sup> I-labeled beta-amyloid peptide Aβ <sup>1-40</sup> through the blood-brain barrier and binding to Alzheimer disease amyloid of the Aβ <sup>1-40</sup> /vector complex", Proc. Natl. Acad. Sci. USA, 1995, pgs. 10227-31, Volume 92, Number 22.	
		SHI, N., AND PARDRIDGE, W.M., "Noninvasive gene targeting to the brain", Proc. Natl. Acad. Sci. USA, 2000, pgs. 7567-7572, Volume 97, Number 13.	
		SKARLATOS, S., ET AL., "Transport of [ <sup>125</sup> I]transferrin through the rat blood-brain barrier", Brain Research. 1995, pgs. 164-71, Volume 683, Number 2.	
		WU, D., AND PARDRIDGE W.M., "Central nervous system pharmacologic effect in conscious rats after intravenous injection of a biotinylated vasoactive intestinal peptide analog coupled to a blood-brain barrier drug delivery system", The Journal of Pharmacology and Experimental Therapeutics, 1996, pgs. 77-83, Volume 279, Number 1.	
		WU, D., ET AL., "Pharmacokinetics and blood-brain barrier transport of [3H]-biotinylated phosphorothioate oligodeoxynucleotide conjugated to a vector-mediated drug delivery system", The Journal of Pharmacology and Experimental Therapeutics, 1996, pgs. 206-11, Volume 276, Number 1.	
		YOSHIKAWA, T., AND PARDRIDGE, W.M., "Biotin delivery to brain with a covalent conjugate of avidin and a monoclonal antibody to the transferrin receptor", The Journal of Pharmacology and Experimental Therapeutics, 1992, pgs. 897-903, Volume 263 Number 2.	
		ZHANG, Y., AND PARDRIDGE, W.M., "Conjugation of brain-derived neurotrophic factor to a blood-brain barrier drug targeting system enables neuroprotection in regional brain ischemia following intravenous injection of the neurotrophin", Brain Research, 2001, pgs. 49-56, Volume 889, Number 1-2.	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.